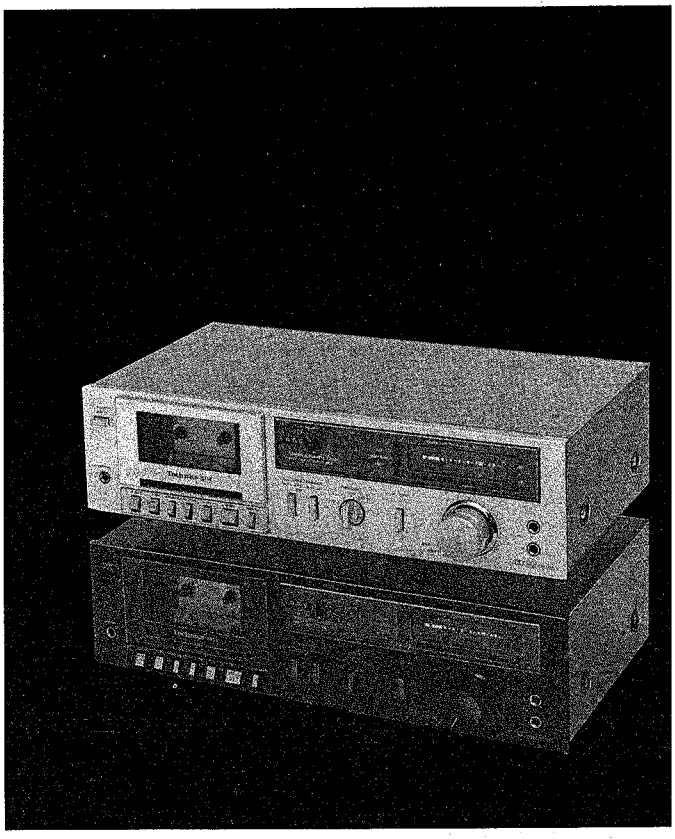
Technics

TAPE DECK

RS-M14

OPERATING INSTRUCTIONS



Before operating this set, please read these instructions completely.

IMPORTANT (FOR ENGLAND)

THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE:

BLUE: NEUTRAL **BROWN: LIVE**

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

* The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
* The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

If a 13-amp (B.S.1363) plug is used, a 3-amp fuse must be fitted, or if any other type of plug is used, a 5-amp fuse must be fitted either in the plug or adaptor or at the distribution board.

NOTICE:

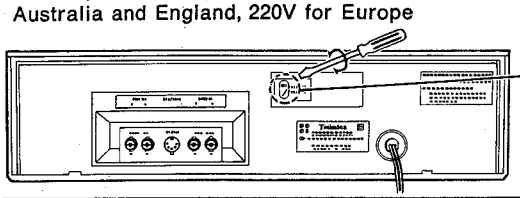
This apparatus was produced to B.S.800:1977

1

• VOLTAGE ADJUSTMENT • INSTELLING VAN DE NETSPANNING • EINSTELLEN DER SPANNUNG
• SPÄNNINGSJUSTERING • INDSTLLING AF SPÆNDINGEN • REGOLAZIONE DEL VOLTAGGIO
• REGLAGE DU VOLTAGE

Preset power voltage; 240V for Australia and England, 220V for Europe

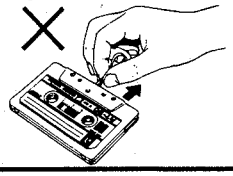
VOLTAGE SELECTOR

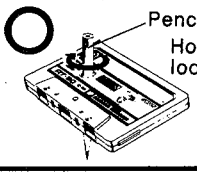


• SETTING OF VOLTAGE SELECTOR • INSTÄLLNING AV SPÄNNINGSVÄLJAREN • REGLAGE DU SELECTEUR DE VOLTAGE • STAND VAN DE NETSPANNINGS SELEKTOR • SPÆNDINGSVÆLGERENS STILLING • EINSTELLUNG DES SPANNUNGSWAHLERS • REGOLAZIONE DEL SELETTORE DEL VOLTAGGIO	110V	125V	220V	240V
• LOCAL VOLTAGE • LOKAL SPÄNNING • TENSION LOCALE • PLAATSELIJKE NETSPANNING • DEN STEDLIGE NETSPÆNDING • ÖRTL. NETSPANNUNG • TENSIONE LOCALE	AC:100, 105, 110V	AC: 115, 117, 120, 125V	AC:200, 210, 220V	AC: 225, 230, 240, 250V
	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz

2

• ABOUT CASSETTE TAPE • LES CASSETTES • OM KASSETTEBÅND • NOZIONI CIRCA LE CASSETTE
• OM KASSETTBAND • KASSETTE BAND • DIE CASSETTE



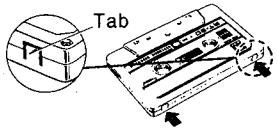


Use standard cassette.

Do not use this type.

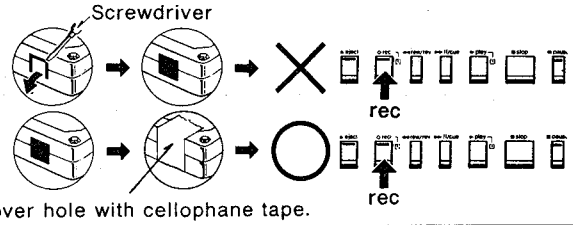
3

• ACCIDENTAL-ERASE PREVENTION • DISPOSITIF DE PREVENTION D'ENREGISTREMENT • BESKYTTELSE MOD SLETNING
• SKYDD MOT OAVSIKTLIG RADERING • VOORKOMEN VAN ABUISIEVELIJK UITWISSEN • LÖSCHSCHUTZVORRICHTUNG
• PREVENZIONE CANCELLAMENTO ACCIDENTALE



For side 1 Voor kant 1 Per il lato 1
För sida 1 For side 1
Pour le côté 1 Für Seite 1

For side 2 Voor kant 2 Per il lato 2
För sida 2 For side 2
Pour le côté 2 Für Seite 2



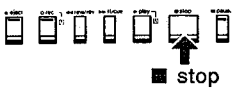
Cover hole with cellophane tape.

4

• MAINTENANCE • ENTRETIEN • VEDLIGEHOLDELSE • MANUNTENZIONE
• VARD • ONDERHOUD • WARTUNG

Operate in the numbered order.
Gör som bilderna visar i nummerordning.
Procédér par ordre numérique.
Voer de handelingen uit in de genummerde volgorde.
Gå frem efter numrene.
Das Gerät in der nummerierten Reihenfolge bedienen.
Operare nell'ordine numerato.

1



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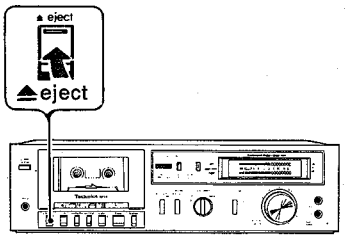

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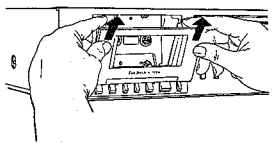

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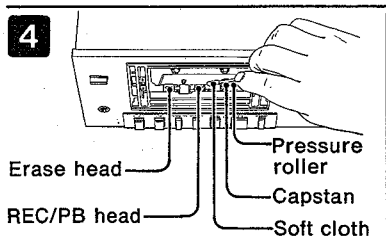

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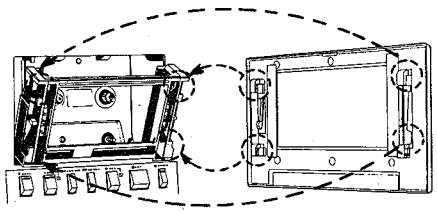

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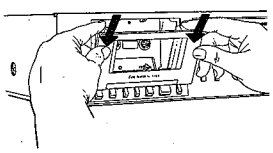
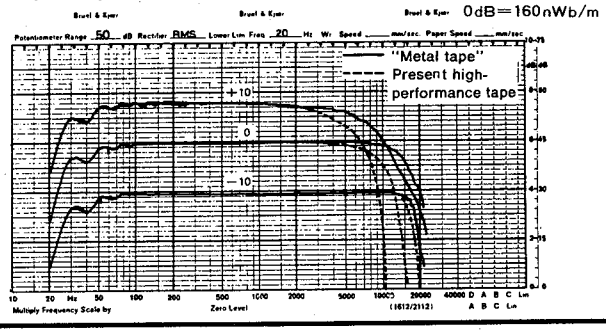


*'Dolby' and the double-D symbol are trademarks of Dolby Laboratories.

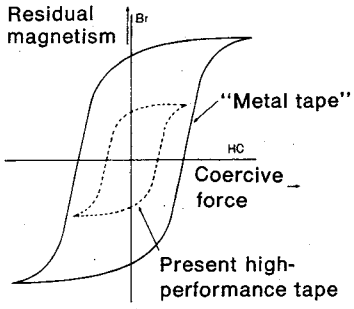
5

- "Metal tape"
- "Metal tape"
- "Metal tape"
- "Metal tape"
- "Metal tape"
- "Metal tape"

- "Metal tape" frequency response example
- Exempel på frekvensgång med "Metal tape"
- Exemple de courbe de réponse de la bande "Metal tape"
- Voorbeeld van weergavekarakteristiek van "Metal tape" band
- Frekvensgang for et "Metal tape"
- Frequenzgang des "Metal tape"
- Esempio risposta di frequenza nastro "Metal tape"

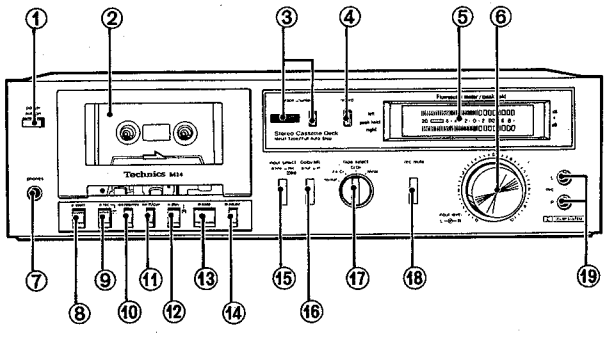


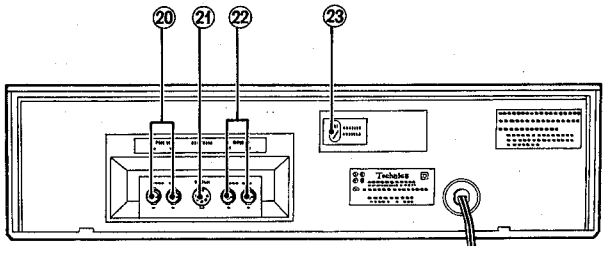
- "Metal tape" magnetic characteristics
- Magnetisk karakteristik för "Metal tape"
- Caractéristiques magnétiques de la bande "Metal tape"
- Magnetische karakteristieken van de "Metal tape" band
- Magnetisk karakteristik for "Metal tape"
- Magnetisierungskennlinie des "Metal tape "
- Caratteristiche nastro magnetico "Metal tape"



6

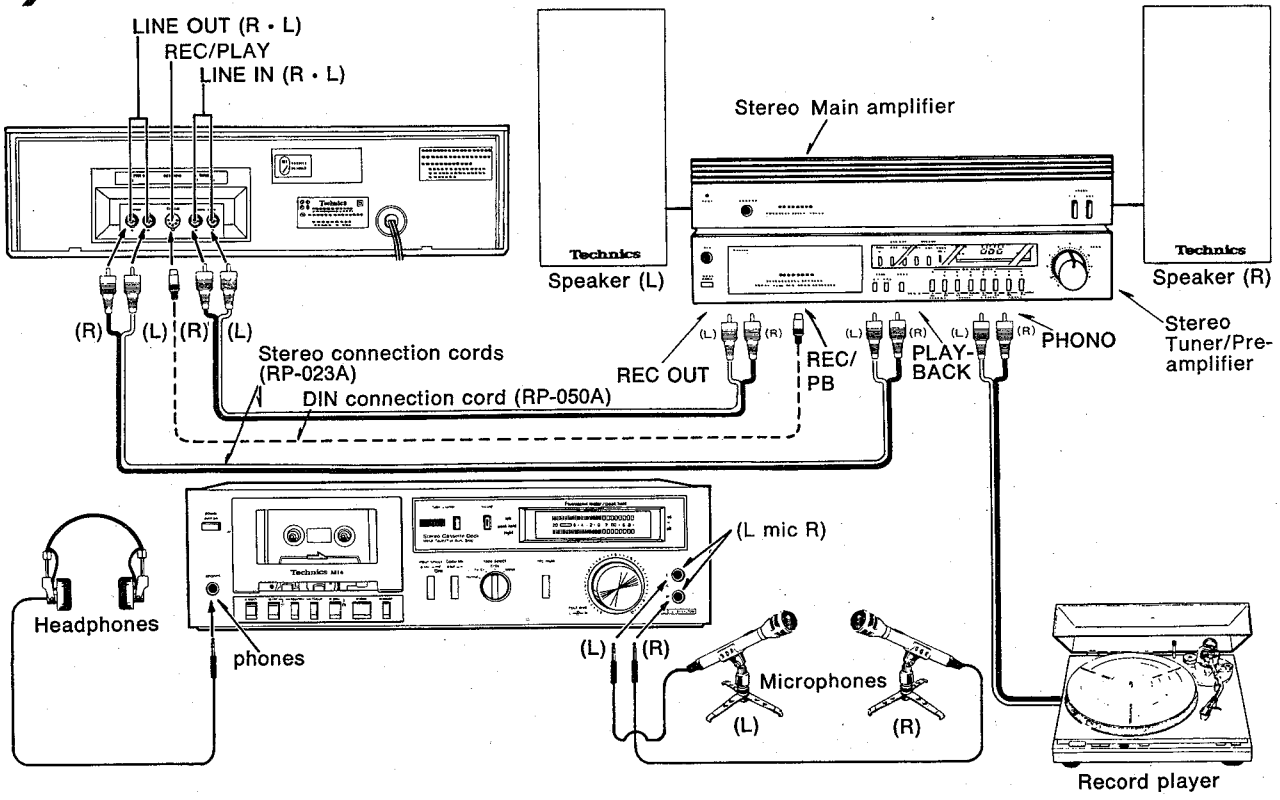
- CONTROLS
- KONTROLLER
- LES COMMANDES
- BEDIENINGSKNOPPEN
- BETJENING
- BEDIENUNGSELEMENTE
- CONTROLLO





7

- CONNECTIONS
- ANSLUTNINGAR
- BRANCHEMENTS
- AANSLUITINGEN
- TILSLUTNING
- ANSCHLÜSSE
- CONNESSIONI



8

- **TAPE SELECTOR SETTINGS FOR VARIOUS TAPES**
- **BANDVÄLJARENS LÄGE FÖR TYPER AV BAND**
- **POSITION DU SELECTEUR DE BANDE POUR DIFFERENTES BANDES**
- **STANDEN VAN DE BANDSOORTSELECTOR VOOR VERSCHILLENDE BANDSOORTEN**
- **INDSTILLING AF BÅNDVÆLGEREN FOR FORSKELLIGE BÅNDTYPER**
- **WAHLSCHALTERSTELLUNG FÜR VERSCHIEDENE BÄNDER**
- **POSIZIONI DEL SELETTORE DEL NASTRO PER I VARI TIPI DI NASTRO**

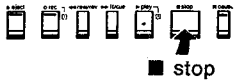
Tape selector	Tape brand	Tape type
normal	Technics XD	C-46, C-60, C-90
	Technics LN	C-60, C-90
	BASF LHI	C-60, C-90
	BASF PROFESSIONAL I	C-60, C-90
	BASF SLH	C-60, C-90
	FUJI FX I	C-60, C-90
	MAXELL UD	C-60, C-90
	MAXELL UDXL I	C-60, C-90
	SONY AHF	C-60, C-90
	TDK AD	C-60, C-90
Fe-Cr	BASF PROFESSIONAL III	C-60
	SONY Fe-Cr	C-60
CrO_2	Technics XA	C-46, C-60, C-90
	MAXELL UDXL II	C-46, C-60
	SCOTCH MASTER II	C-46, C-60
	TDK SA	C-46, C-60
	FUJI FX II	C-60
Metal		

9

- **CASSETTE INSERTION AND REMOVAL**
- **ILAGGNING OCH UTTAGNING AV KASSETTEN**
- **MISE EN PLACE ET ENLEVEMENT DES CASSETTES**
- **CASSETTE INLEGGEN EN UITNEMEN**
- Operate in the numbered order.
- Gör som bilderna visar i nummerordning.
- Procédér par ordre numérique.
- Voer de handelingen uit in de genummerde volgorde.

- **ISÆTNING OG UDTAGING AV KASSETTEN**
- **EINLEGEN UND ENTNEHMEN DER CASSETTEN**
- **INSERZIONE ED ESPUSIONE DELLA CASSETTA**
- Gå frem efter numrene.
- Das Gerät in der nummerierten Reihenfolge bedienen.
- Operare nell'ordine numerato.

1



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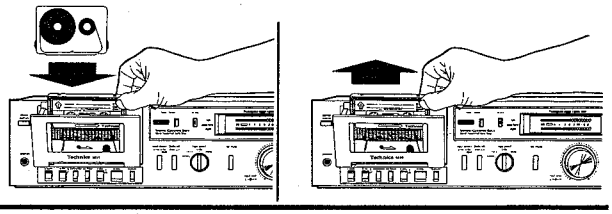


- **OPERATION NOTES**
- **ANVÄNDNINGSRÅD**
- **PRECAUTIONS A PRENDRE**

- When the power is not being supplied to the unit and when the Record button or Play button is depressed, and then the Stop button is depressed and then the power is switched on, the head section may operate. However, this does not indicate that there is anything wrong with the unit.
- If the Record button or the Play button is depressed immediately after the power has gone off, the head section will remain raised. This means that the tape will not be ejected even when the Eject button is depressed. In cases like this, switch on the power again.

- När apparaten inte får någon ström, när in-eller avspelningsknappen är intryckt, stoppknappen trycks in och strömmen slås till, kan det hända att bandhuvuddelen är i funktion. Detta betyder dock ej att något är fel.
- Om in-eller avspelningsknappen trycks in omedelbart efter det strömmen slagits från, stannar bandhuvuddelen kvar i lyft läge, och kassettuttagningen fungerar ej. Slå i sådant fall till strömmen igen.

- Quand l'appareil n'est pas alimenté en courant et que le bouton d'enregistrement ou de lecture sont enfoncés, il se peut que la section de tête fonctionne quand le bouton d'arrêt est enfoncé et que l'alimentation est fournie. Toutefois, ceci n'est nullement le signe d'une anomalie de l'appareil.
- Si le bouton d'enregistrement ou celui de lecture sont actionnés immédiatement après avoir coupé l'alimentation, il se peut que la section des têtes reste avancée. Dès lors, la bande ne sera pas éjectée, même si l'on actionne le bouton d'éjection. Dans ce cas, mettre à nouveau l'appareil sous tension.

- Als opeenvolgend de opname- en weergavetoets worden ingedrukt, de stoptoets ingedrukt en het apparaat wordt-aangeschakeld, is het mogelijk dat het koppensysteem funktioneert. Dit duidt echter niet op schade.
- Als de opname- of weergavetoets onmiddellijk na het uitschakelen van het apparaat wordt ingedrukt, zullen de koppen naar voren blijven staan. Het is in dat geval echter niet mogelijk de cassette uit de houder te verwijderen door de uitwerptoets in te drukken. Schakel dan het apparaat weer aan en druk de uitwerptoets in.

- **BEDIENINGSAANWIJZINGEN**
- **FØR APPARATET TAGES I BRUG**

- Når der ikke er strøm på apparatet, og ind- eller afspilningsknappen er nedtrykket, og stopknappen derefter nedtrykkes, hvorefter der tændes for apparatet, så kan tonehovedsektionen bevæge sig. Det betyder ikke, at der er noget galt med apparatet.
- Hvis ind- og afspilningsknappen nedtrykkes, umiddelbart efter at der er slukket for apparatet, vil tonehovedsektionen forblive oppe. Det betyder, at båndet ikke vil blive udløst, når "Eject" knappen påvirkes. I sådanne tilfælde skal der tændes for apparatet igen.

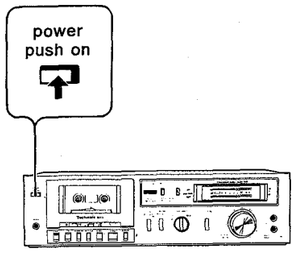
- Wird die Aufnahme- oder Wiedergabetaste, dann die Stopptaste bei ausgeschaltetem Gerät niedergedrückt, kann der Tonkopfteil beim Einschalten des Gerätes in Funktion treten. Dadurch wird jedoch keine Betriebsstörung des Gerätes angezeigt.
- Wird die Aufnahme- oder Wiedergabetaste unmittelbar nach Ausschalten des Gerätes niedergedrückt, bleibt der Tonkopfteil oben. Dies bedeutet, daß die Kassette selbst beim Niederdrücken der Auswurftaste nicht ausgeworfen wird. In derartigen Fällen das Gerät nochmals einschalten.

- Notare che premendo il pulsante della registrazione o dell'ascolto ad apparecchio spento, pur premendo il pulsante dell'arresto, accendendo l'apparecchio, quest'ultimo potrebbe funzionare lo stesso, a dispetto del pulsante d'arresto. Non allarmarsi, poiché questa evenienza non denota alcuna malfunzione dell'apparecchio.
- Se si preme il tasto della registrazione o dell'ascolto immediatamente dopo aver spento l'apparecchio, le testine rimarranno sollevate, impedendo l'espulsione del nastro anche premendo il tasto d'espulsione. In questo caso, riaccendere l'apparecchio e operare correttamente.

- **VORSICHTSMASSNAHMEN**
- **NOTE PER IL FUNZIONAMENTO**

10 • PLAYBACK • AVSPELNING • LECTURE • WEERGAVE • AFSPILNING • WIEDERGABE • RIPRODUZIONE

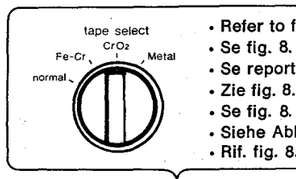
1



2

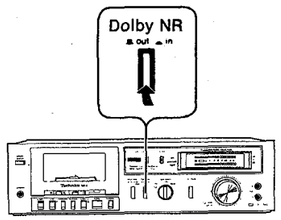
- Refer to fig. 9- 1 2 3.
- Se fig. 9- 1 2 3.
- Se reporter à fig. 9- 1 2 3.
- Zie fig. 9- 1 2 3.
- Se fig. 9- 1 2 3.
- Siehe Abb. 9- 1 2 3.
- Rif. fig. 9- 1 2 3.

3



- Refer to fig. 8.
- Se fig. 8.
- Se reporter à fig. 8.
- Zie fig. 8.
- Se fig. 8.
- Siehe Abb. 8.
- Rif. fig. 8.

4



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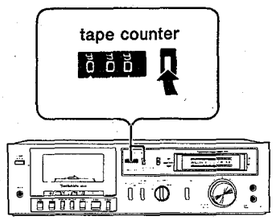

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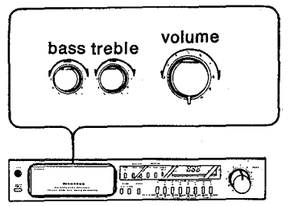

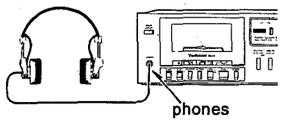

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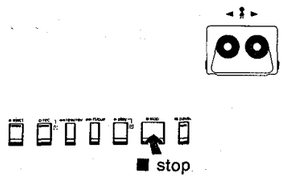
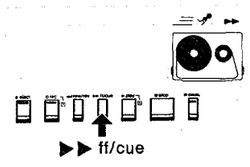


11 • FAST FORWARD AND REWIND • FRAM- OCH ÅTERSPOLNING • BOBINAGE RAPIDE ET REBOBINAGE • SNEL OPSPOELEN EN TERUGSPOELEN • HURTIG FREMSPOLING OG TILBAGESPOLING • SCHNELLVORLAUF UND RÜCKLAUF • AVVOLGIMENTO RAPIDO E RIAVVOLGIMENTO

1



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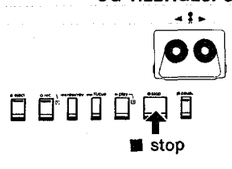

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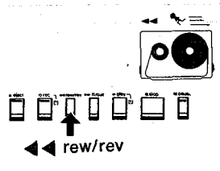
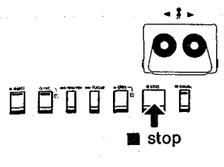
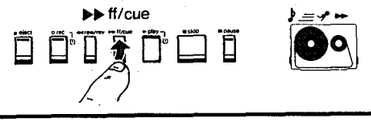
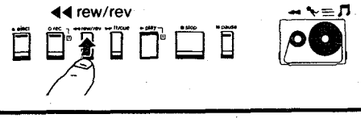


2



12 • "CUE" AND "REVIEW" • MEDHÖRNING VID SNABBSPOLNING • "SONDAGE" AVANT ET "SONDAGE" • MEELUISTEREN NE HERVATTEN • "MEDHØR UNDER FREM-OG TILBAGESPOLING" • "CUE" UND "REVIEW" • "SEGNALIZZAZIONE" E "REVISIONE"





13 • REWIND/AUTOMATIC PLAYBACK • ÅTERSPOLNING/AUTOMATISK AVSPELNING • REBOBINAGE/LECTURE AUTOMATIQUE • TERUGSPOELENEN AUTOMATISCHE WEERGAVE • OM "TILBAGESPOLING/AUTOMATISK AFSPILNING" • RÜCKLAUF/AUTOMATISCHE WIEDERGABE • RIAVVOLGIMENTO/RIPRODUZIONE AUTOMATICA

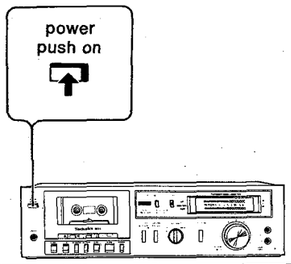
1

2

14 • RECORDING • INSPELNING • ENREGISTREMENT • OPNAME • OPTAGELSE • AUFNAHME • REGISTRAZIONE

- Do not depress the Play button since this unit is set to the recording mode when only the Record button is depressed.
- Tryck inte in avspelningsknappen när denna apparat är inställd för inspelning när enbart inspeliningsknappen är intryckt.
- Ne pas enforcer le bouton de lecture étant donné que cet appareil n'est placé en mode d'enregistrement que par pression sur le bouton d'enregistrement.
- Druk de weergaveknop niet in aangezien het apparaat voor opnemen staat ingesteld als de opnameknop is ingedrukt.
- Tryk ikke afspilningsknappen ned, da denne enhed er indstillet til optagelse, når kun indspilningsknappen er nedtrykket.
- Bei diesem Gerät braucht zur Aufnahme nur die Aufnahmetaste gedrückt werden. Die Wiedergabetaste also bitte nicht drücken.
- Non abbassare il tasto di riproduzione in quanto apparecchio si regola per la funzione di registrazione abbassando soltanto il tasto di registrazione.

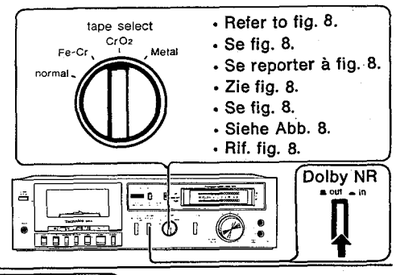
1



2

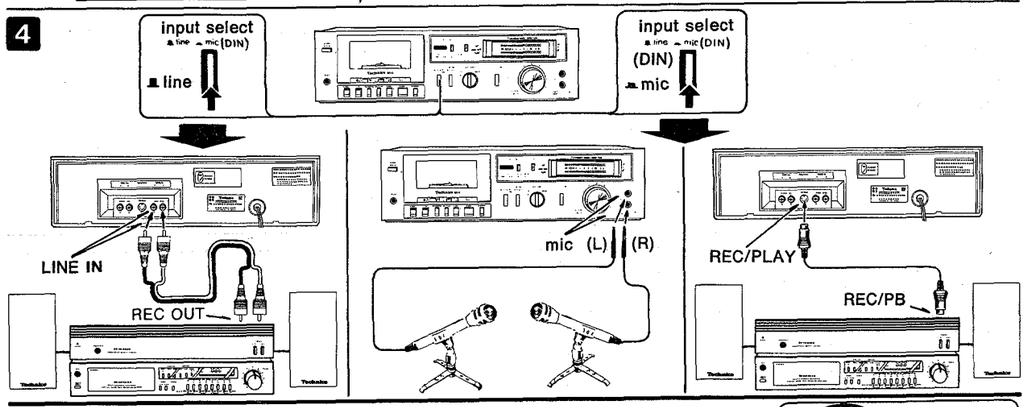
- Refer to fig. 9- 1 2 3.
- Se fig. 9- 1 2 3.
- Se reporter à fig. 9- 1 2 3.
- Zie fig. 9- 1 2 3.
- Se fig. 9- 1 2 3.
- Siehe Abb. 9- 1 2 3.
- Rif. fig. 9- 1 2 3.

3



- Refer to fig. 8.
- Se fig. 8.
- Se reporter à fig. 8.
- Zie fig. 8.
- Se fig. 8.
- Siehe Abb. 8.
- Rif. fig. 8.

4



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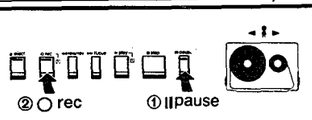

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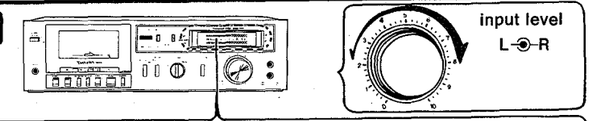
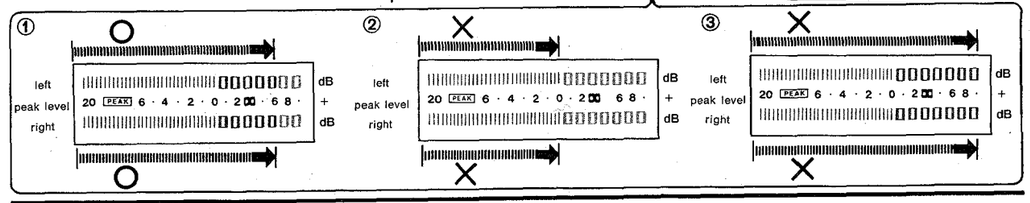
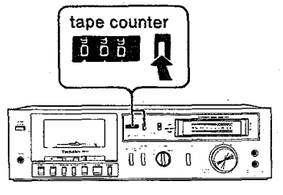




7



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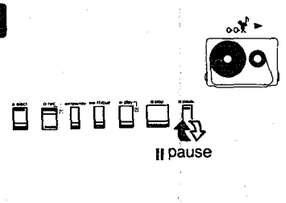
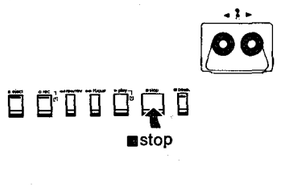
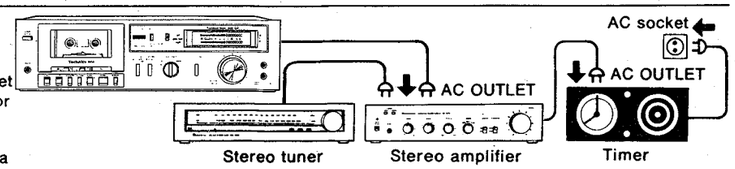


9



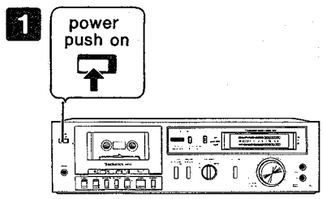
15 • TIMER PLAYBACK AND RECORDING • INSPELNING OCH AVSPELNING MED TIDUR • ENREGISTREMENT ET LECTURE AVEC MINUTERIE • OPNAME EN WEERGAVE MET BEHULP VAN EEN SCHAKELKLOK • INDSPILNING OG AFSPILNING MED PROGRAMUR • AUFNAHME UND WIEDERGABE MIT EINEM ZEITSCHALTER • REGISTRAZIONE E RIPRODUZIONE USANDO IL "TIMER"

- Connections to the power source
- Nätanslutning
- Branchements a l'alimentation
- Aansluitingen aan het voedings net
- Tilslutningsmuligheder på strøm for syning
- Anschluß ans Netz
- Connessioni alla sorgente elettrica



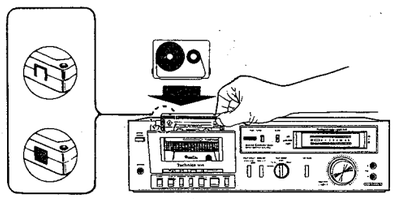
- With timer recording when the unit is changed over from the playback mode to the recording mode immediately after the power has been switched off (the timer has been set), the Record button is locked but when the power is switched on, the first button which is pressed takes priority and the unit is set to the playback mode. In cases like this, switch on the power and set the deck up for timer recording again.
- **Om avspelningsknappen är intryekt och inspelningsknappen trycks in omedelbart efter det strömmen slagits från via tidur, låses inspelningsknappen. När strömmen slås till igen är det dock avspelningen som träder i funktion, Slå i sådant fall till strömmen igen coh gör apparaten klar för inspelning med tifur.**
- A l'enregistrement par minuterie, quand on fait passer l'appareil du mode de lecture à celui d'enregistrement immédiatement après avoir coupé l'alimentation électrique (la minuterie a été réglée), le bouton d'enregistrement est verrouillé, mais quand l'alimentation électrique est fournie, le premier bouton enfoncé obtient la priorité et l'appareil est placé en mode de lecture. Dans ces cas, placer l'appareil sous tension et régler à nouveau le magnétophone pour l'enregistrement par minuterie.
- Als de opnametoets onmiddellijk na het uitschakelen van het apparaat d.m.v. de schakelklok, ingedrukt wordt, terwijl de weergavetoets ingedrukt staat, zal de opnametoets vergrendelen. Als echter de opnametoets ingedrukt wordt voordat het apparaat wordt aangeschakeld, terwijl de weergavetoets reeds ingedrukt staat, zal het apparaat voor weergeven ingesteld worden aangezien de eerst ingedrukte toets in zo'n geval voorrang heeft. Schakel dus allereerst het apparaat aan en stel het daarna pas in voor opnemen met een schakelklok.
- **Hvis afspilningsknappen nedtrykkes, og indspilningsknappen påvirkes, umiddelbart efter at strømmen er afbrudt af stop/start-uret, vil indspilningsknappen låses. Når der tændes for strømmen igen, vil den først nedtrykkede knap få forrang, så apparatet sættes til afspilning. I sådanne tilfælde, skal der tændes for apparatet, så det igen kan indstilles til styring af et stop/start-ur.**
- Wird das Gerät beim Aufzeichnen mittels Schaltuhr unmittelbar nach Ausschaltung (Einstellung der Schaltuhr) von der Wiedergabe- auf die Aufnahme-Betriebsart umgeschaltet, ist die Aufnahmetaste verriegelt; beim Einschalten ist jedoch die zuerst gedrückte Taste vorrangig, und das Gerät wird auf die Wiedergabe-Betriebsart eingestellt. In derartigen Fällen das Gerät einschalten und nochmals auf Aufnahme mittels Schaltuhr einstellen.
- Registrando col temporizzatore e cambiando la funzione dell'apparecchio da quella di ascolto a quella di registazione subito dopo aver disinserito la corrente (il temporizzatore è stato regolato), il pulsante di registrazione è bloccato in posizione ma quando si inserisce la corrente il primo pulsante premuto ha la priorità, e l'apparecchiio si regola per l'ascolto. In questi casi, accendere l'apparecchio e regolare di nuovo il registratore per la registrazione col temporizzatore per la registrazione col temporizzatore.

■ **Playback with a timer**
■ **Avspelning med tidur**
■ **Lecture avec minuterie**

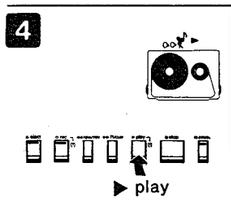


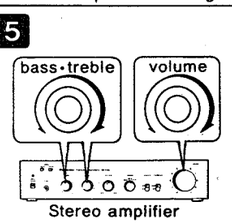
■ **Terug spelen met behulp van een tijdklok**
■ **Afspilning med programur**

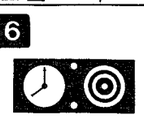
2
- Refer to fig. 9- 1 2 .
- Se fig. 9- 1 2 .
- Se reporter à fig. 9- 1 2 .
- Zie fig. 9- 1 2 .
- Se fig. 9- 1 2.
- Siehe Abb. 9- 1 2 .
- Rif. fig. 9- 1 2 .



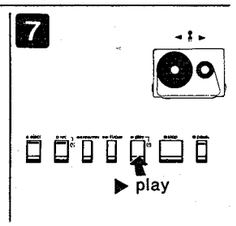
■ **Wiedergabe mit einem zeitschalter**
■ **Riproduzione col "timer"**



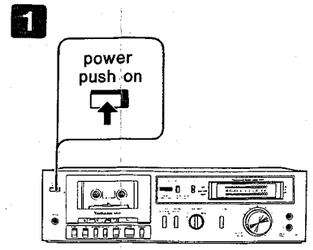




- See to page E-4.
- Se sid SV-3.
- Voir page F-4.
- Zie naar N-4.
- Se side D-4.
- Siehe Seite D-4.
- Ved. pag. I-4.

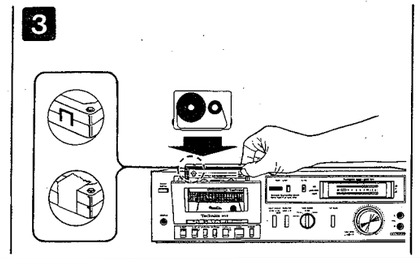


■ **Recording with a timer**
■ **Inspelning med tidur**
■ **Enregistrement avec minuterie**

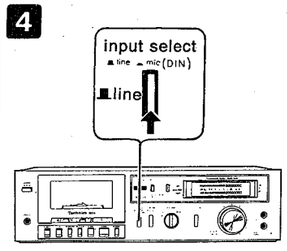


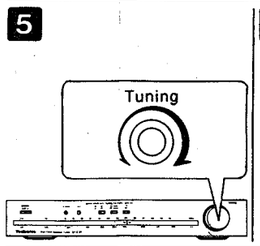
■ **Opname met een tijdklok**
■ **Indspilning med programur**

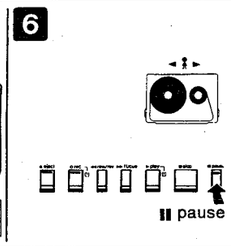
2
- Refer to fig. 9- 1 2 .
- Se fig. 9- 1 2 .
- Se reporter à fig. 9- 1 2 .
- Zie fig. 9- 1 2 .
- Se fig. 9- 1 2 .
- Siehe Abb. 9- 1 2 .
- Rif. fig. 9- 1 2 .

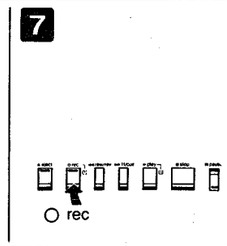


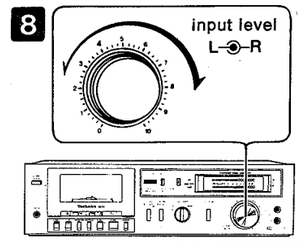
■ **Aufnahme mit einem zeitschalter**
■ **Registrazione col "timer"**



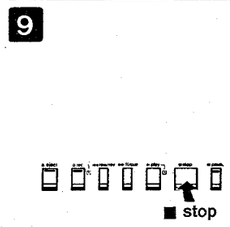


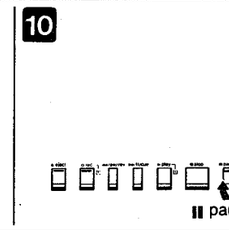


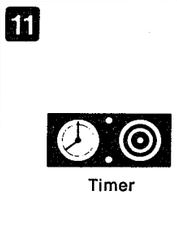




- Refer to fig. 14-6.
- Se fig. 14-6.
- Se reporter à fig. 14-6.
- Zie fig. 14-6.
- Se fig. 14-6.
- Siehe Abb. 14-6.
- Rif. fig. 14-6.







- See to page E-4.
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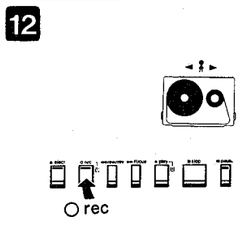
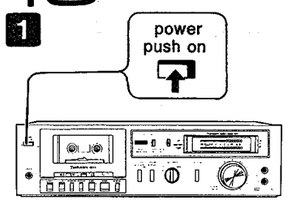
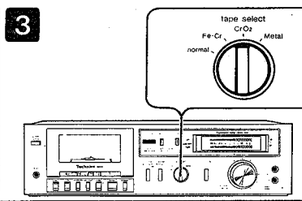
- Se side D-4.
- Siehe Seite D-4.
- Ved. pag. I-4.



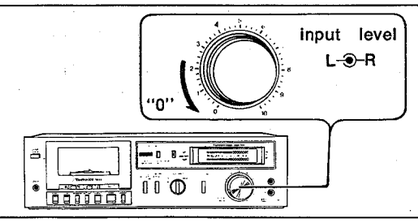
16 • ERASING • RADERING • EFFACEMENT • WISSEN • SLETNING • LÖSCHEN • CANCELLATURA (del nastro)

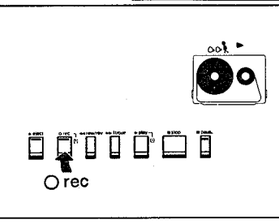


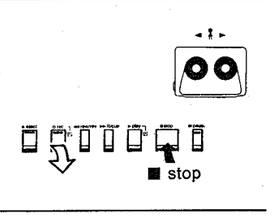
2
- Refer to fig. 9- 1 2 3 .
- Se fig. 9- 1 2 3 .
- Se reporter à fig. 9- 1 2 3 .
- Zie fig. 9- 1 2 3 .
- Se fig. 9- 1 2 3 .
- Siehe Abb. 9- 1 2 3 .
- Rif. fig. 9- 1 2 3 .



- Refer to fig. 8.
- Se fig. 8.
- Se reporter à fig. 8.
- Zie fig. 8.
- Se fig. 8.
- Siehe Abb. 8.
- Rif. fig. 8.







(ENGLISH)

We want to thank you for selecting the model RS-M14. Technics cassette tape deck for your recording and playback enjoyment. To obtain the maximum benefit of the many features of this deck, please carefully read these operation instructions.

OPERATION NOTES

1. **Horizontal placement**
   For best performance, place this unit in a horizontal position.
2. **Location**
   Performance may be adversely affected by extremely hot [above 100°F. (35°C.)] or extremely cold [below 40°F. (5°C.)] locations, direct sunshine, or excessive vibration.
3. **Power source**
   This unit features a DC operated motor which makes it possible to operate on 50 Hz or 60 Hz AC power frequency without any conversion. The voltage source should be within ±5% of the unit's rated voltage. Variations in excess of ±10% of rated voltage may cause uneven performance, or possible damage to the unit.
4. **Clean the head assembly**
   One of the most important factors in the determination of good tape recorder performance is regular cleaning of the head assembly.
5. A "click" noise may be heard when the Power switch is turned on or off. To avoid this, be sure to set the volume control of the amplifier to the minimum position.

ABOUT CASSETTE TAPE (Refer to fig. 2.)

Notes:

- Do not pull the tape out of the cassette openings.
- If the tape is loose in the cassette, the tape may become wound onto the pressure roller and result in breakage or damage. Tighten looseness of the tape, if necessary, by using a pencil as shown in the figure.
- Avoid using C-120 cassette tape with this unit because this tape can easily become broken, stretched or twisted if not used with extreme care.
- Avoid storing this unit in places where the temperature is high and/or where the humidity is high.
- If the tape is very tightly wound or unevenly wound, fast forward it and then rewind it before use.

MAINTENANCE (Refer to fig. 4.)

Because the Head assembly and the Capstan are in constant contact with the moving tape, dirt or residue from the tape on these parts will decrease the sound quality. They should be cleaned after every 10 hours of use, as shown in figure 4.

Notes:

1. Don't allow magnetic materials, such as a screwdriver or a magnet, near the head assembly.
2. When cleaning, be careful not to bend the tape guides.
3. Don't attempt to clean the cabinet with alcohol, benzine or thinner, because it may damage the finish. If the cabinet is dirty, clean with a soft cloth dampened with a soap-and-water solution.
4. When "Metal tape" is used, the Head assembly should be cleaned after each 10 times of use.

"Metal tape" (Refer to fig. 5.)

Technological developments to accomodate "Metal tape"

"Metal tape" is a totally new kind of high performance tape, and conventional cassette tape decks cannot sufficiently bring out its performance potential.
Our company has succeeded in developing the following technology to exploit the advantages of "Metal tape" to its fullest extent.

1. **Development of MX head featuring minimal distortion with high input signal levels.**
   The MX head employs permalloy and it features a high saturation magnetic flux density and also a superlative wear resistance. It was developed especially for the new breed of "Metal tape".
2. **Development of high-efficiency sendust serase head.**
   Sendust is a material with a high saturation magnetic flux density and it is capable of extremely efficient erasing even with "Metal tape" with a high maximum output level.
3. **The power in the bias oscillator circuit has been increased.**

The "Metal tape" selector

"Metal tape" significantly improves the performance of the tape deck, but, because there is a difference of bias characteristics and the erase characteristics between conventional and "Metal tape", it is now necessary to have a special tape selector position for "Metal tape".
Our tape recorders will bear the "Metal" designation for this position of the tape selector.

The "Metal" position

1. Playback time- constant .....70μS (same as at the "CrO_2" position)
2. Bias current .....about 150% (compared to "CrO_2" position)
3. Erase current .....about 150% (compared to "CrO_2" position)
4. Recording equalization .....Special equalization

A word about "Metal tape"

Conventional cassette tapes can be broadly classified into 2 categories according to the magnetic material coated on the tape surface: the ferric-oxide (γ-Fe_2O_3) type, including ordinary LH tape, etc.; and the chrome-dioxide (CrO_2) type, including XA tape, etc.
Continued technological advances have been made in an attempt to develop these tapes to a high level of performance, but recently there has been a recognized need for the development of a new material to improve performance much further.
In response to this need, "Metal tape" has been developed as a new kind of tape, employing a magnetic alloy of pure iron (Fe) as the main component in the magnetic substance. In comparison with conventional cassette tape, "Metal tape" can record a far greater amount of information at a high density. As a result, the maximum output level (MOL) has been improved throughout the entire range, and, in particular, the frequency response characteristics at high levels and the dynamic range in the high range have been greatly improved. This means, therefore, that a remarkable improvement of sound quality has been made possible. (It should be noted that the tape base and parts of the tape other than the magnetic substance are composed of the same material as previously used.)

CONTROLS (Refer to fig. 6.)

① Power switch (power)
② Cassette holder
③ Tape counter and Reset button (tape counter)
④ Record indication lamp (record)
⑤ FL (fluorescent level) meters
⑥ Input level controls (input level) (L ⇔ R)
⑦ Headphones jack (phones)
⑧ Eject button (▲ eject)
⑨ Record button (○ rec)
⑩ Rewind/Review button (◀◀ rew/rev)
⑪ Fast forward/Cue button (▶▶ ff/cue)
⑫ Play button (▶ play)
⑬ Stop button (■ stop)
⑭ Pause button (II pause)
⑮ Input selector (input select)
⑯ Dolby noise-reduction switch (Dolby NR)
⑰ Tape selector (tape select-normal/Fe-Cr/CrO2/Metal)
⑱ Record-muting button (rec mute)
⑲ Microphone jacks (L mic R)
⑳ Line output jacks (LINE OUT) (R·L)
㉑ Record/Playback connection socket (REC/PLAY)
㉒ Line input jacks (LINE IN) (R·L)
㉓ Voltage selector (VOLTAGE SELECTOR)

CONNECTION NOTES (Refer to fig. 7.)

1. Connections should be made in accordance with the connection diagram and the following instructions: When 2 microphones are used in order to record in stereophonic sound, be sure both of them have the same performance and specification standards.
2. Do not connect both a DIN connection cord and ordinary connection cords to this unit at the same time because to do so will result in abnormal oscillation from the amplifier, and recording and playback will be impossible.
3. Note that a DIN connection cord cannot be used to connect this unit with another tape deck because a complete circuit is not made.
4. Do not connect the DIN connection cord to the Remote-control connector since this may result in damage being sustained to the amplifier or speakers.

Location of this unit and stereo amplifier

If this unit is placed on top of the stereo amplifier or next to it, a "hum" noise may be heard during tape playback. Refer to the information below in order to avoid this.

(1) If the stereo amplifier and this unit are placed one above the other, leave as much space as possible between them, and place them where there is the least amount of hum.
(2) If the stereo amplifier and this unit are placed one beside the other, try reversing their positions, and place them where there is the least amount of hum.

TAPE SELECTOR (Refer to fig. 8.)

In order to get the best performance from tape, and to record and playback with little distortion, the Tape Selector should be set as shown in figure 8.
Note that there may be a difference in sensitivity of 2 or 3 dB, depending on the type of tape.

CASSETTE INSERTION AND REMOVAL (Refer to fig. 9.)

Notes:

- Be sure the cassette is placed so that the edge with the holes is facing downward.
  The Cassette holder cannot be closed if the cassette is inserted incorrectly.
- Be sure to close the Cassette holder gently.
- The operation buttons of this unit will not function if they are pressed while the Cassette holder is open.

Cassette ejection mechanism

Be careful not to press the Eject button while the tape is moving, because the cassette will stop the operation and the holder will open.

PLAYBACK (Refer to fig. 10.)

Notes:

- Note that the operation buttons will not function until about 5 seconds have passed after the power is turned on.
  The muting circuitry is used in order to make playback starts better.
- To listen to the playback sound with headphones, connect stereo headphones to the Headphones jack. Sound can then be heard directly from the unit, without connection to an amplifier if an amplifier is connected its controls have no effect upon the sound heard from the headphones.
- Press the Dolby noise-reduction switch when recording or playing back by the Dolby NR system.
- When the power is not being supplied to the unit and when the Record button or Play button is depressed, and then the Stop button is depressed and then the power is switched on, the head section may operate. However, this does not indicate that there is anything wrong with the unit.
- If the Record button or the Play button is depressed immediately after the power has gone off, the head section will remain raised. This means that the tape will not be ejected even when the Eject button is depressed. In cases like this, switch on the power again.

FAST FORWARD AND REWIND (Refer to fig. 11.)

Caution:
- Do not push the Eject button during the fast forward or the rewind operation. Before pushing the Eject button, be sure to first stop the tape by pushing the Stop button.

"CUE" AND "REVIEW" (Refer to fig. 12.)

When the Fast forward/Cue button (or Rewind/Review button) is pushed during playback, the playback sound can be monitored through the speaker as the tape is sent forward (backward).

Notes:
- Reduce the volume level of the stereo amplifier before performing the "cue" or "review" operation. If the volume is too high, the tweeters in the speaker systems may be damaged.

REWIND/AUTOMATIC PLAYBACK (Refer to fig. 13.)

To again playback tape after recording or playback, push the Play button and the Rewind/Review button at the same time. The tape will be rewound and playback will automatically begin.

RECORDING (Refer to fig. 14.)

- Make the adjustment so that the, meters illuminate until the "+6 dB" indication when the input signal level is the greatest, using the Input level controls. (Refer to fig. 14-6-①.)
- For recording of chamber music (such as a string quartet), and other music in which there is very little percussion sound, adjust so that the level is slightly lower (to an illuminated indication up to "+3 dB").
- If the fluorescent level meters show an illuminated indication of only up to about "0 dB" when a loud sound is received, the recorded results will be rather noisy (with a poor signal-to-noise ratio). (Refer to fig. 14-6-②.)
- If, conversely, the Fluorescent level meters continuously shown an illuminated indication up to "+8 dB," the recorded results will be rather distorted. (Refer to fig. 14-6-③.)

Notes:
- After making a valuable recording, it is suggested that the accidental-erase prevention tabs be broken out, using a screwdriver or similar tool, in order to prevent accidental erasing of the recording by later re-recording over it.
- For recording, therefore, be sure that the cassette has the tabs intact, or that the holes (where the tabs were) are covered by cellophane tape.

Recording muting

The recording-muting feature is convenient to prevent recording such unwanted material as commercial messages when recording FM radio broadcasts, or the "click" noise heard when the stylus descends to the disc surface.

How to make blank (no sound recorded) spaces

Immediately after one program has been recorded, keep the Record-muting button depressed for about 5 seconds. After these 5 seconds have elasped, depress the Pause button.
Now monitor the sound and depress the Play button.
Now before the next program is recorded and this can then be recorded. This operation creates an unrecorded blank between the material such as commercials.

Note:
Sounds from the sound source can still be heard, and the Fluorescent level meters will continue to function, while the Record-muting button is pressed, although no sound will be recorded on the tape.

Fluorescent level meters

The unit's level meters employ fluorescent display tubes to indicate the input and output signal levels in the form of a bar graph.
During playback the playback level is indicated, and during recording the recording level is indicated.
This unit's meter is designed for "peak" indication. With peak indication, the level meters respond sensitively to rapid bursts of sound such as that from percussion instruments and so it is possible to record up to near the tape's saturation level with very little distrotion and a good signal-to-noise ratio. Furthermore, the unit is provided with an auto reset peak hold function. In order to facilitate recording level readout, the peak level——apart from the illumination of the meters——can be held on the meter for about 2 seconds. During this time the peak level can easily be read out.
For easy discrimination of values even instantaneously, this unit's fluorescent meters feature a varied shape based on the "0 dB" reference.

Monitoring

To listen to the recording as it is being made, simply connect stereo headphones (8Ω~125Ω) to the Headphones jack. You may also listen to the program as it is being recorded if your receiver or amplifier is equipped with a tape-monitor switch.

Note:
In the same way as for playback, an amplifier can also be used for monitoring.

Automatic-stop system (Full-auto-stop system)

This unit has an automatic-stop system which, when the tape comes to its end during recording, playback, fast forward or rewind, releases the tape-transport mechanism automatically and places the unit into the stop mode.

* Because the mechanism automatically stops when the tape comes to its end, both the operating parts and the tape itself are protected. This unit is free from problems such as Pressure roller deformation resulting from leaving the unit in the stop condition (without pushing the Stop button) for a long period of time.

TIMER RECORDING AND PLAYBACK (Refer to fig. 15.)

* When preparing for timer playback, first play the tape in order to adjust (by using the controls on the stereo amplifier) the volume and tone as desired. When these adjustments are finished, rewind the tape to the position from which the timer playback is to begin.
* Set the timer to the desired time. (Depending upon the type of timer, the power to the amplifier, tape deck and tuner will then be turned off.)
  Refer to the operation instructions of the timer for further information.
* This completes the preparations for timer recording or playback. At the desired time, the power will be turned on and the timer recording or playback will begin.

Note:
- Set the timer to turn the tuner and the deck off, after the recording has been completed, but not before the tape will reach its end to trigger the auto-stop system. If the timer shuts the deck off before the auto-stop system is actuated, the capstan and pressure roller will remain pressed together. To avoid deforming the pressure roller, it should not be held under pressure against the capstan for a long period of time when the deck is off.
- If the Play button is depressed and then the Record button is pushed in immediately after the power has been cut off (at the timer's preset time) during timer recording, the Record button will lock. However, when the power is switched on, the button which was pushed first takes priority and the unit is set to the playback mode. In cases like this, switch on the power and set the unit up for timer recording again.

ERASING (Refer to fig. 16.)

Use the "CrO_2" position for erasing normal tapes, ferrichrome tapes and chrome tapes.
Use the "Metal" position to erase "Metal tape."

Dolby Recording

This unit includes the Dolby noise-reduction system, which reduces tape noise to a remarkable degree.
Briefly, the system works as follows: At low sound levels (where tape noise is most noticeable), the high-frequency portion of the sound is recorded at a higher level. Tape noise is not amplified.
During playback, the level of only that portion of the signal which was increased at the time of the recording, as well as tape noise, is reduced by a like amount. This causes the signal to be heard at a normal level, and the tape noise to be reduced significantly.

TROUBLESHOOTING

If operation of this unit does not seem normal, check the following points before requesting service. If the trouble cannot in this way be determined and corrected, contact the dealer from whom the unit was purchased.

1. **After the tape cassette is inserted, the tape does not move when the Play button is pushed.**
   - Is the power cord correctly connected?
   - Is the Power switch pushed in to the "on" position?
2. **Although the tape moves, no sound is heard.**
   - Is the tape blank?
   - Are the connections of amplifier and speakers correct?
   - Are connection cords from this unit to the amplifier correctly connected?
   - Is the volume control of the connected amplifier set to the correct position?
   - Is the monitor switch of the connected amplifier set to the correct position?
3. **Sound is distorted.**
   - Is the recording level too high?
   - Is the input impedance of the connected amplifier appropriate?
4. **The Record button cannot be pushed down.**
   - Is the tape cassette inserted correctly?
   - Have the recording-prevention tabs of the cassette been removed?
5. **Tape moves, but no sound can be recorded.**
   - Is the Input selector set to the incorrect position?
6. **Playback sound is hoarse or vibrates. Recorded sound is not clear.**
   - Are the head surfaces dirty?
   - Is foreign material adhered to the pressure roller and/or the capstan?